

## **CLOSING INSTRUCTIONS**

### **1. Introduction**

Ladies and Gentlemen of the Jury:

You are about to hear closing arguments of the parties. Before these arguments, I will instruct you on the law. After closing arguments, I will provide very brief instructions governing your deliberations. After that, the case will be in your hands.

It is my job to decide what rules of law apply to the case and to explain those rules to you. It is your job to follow the rules, even if you disagree with them or don't understand the reasons for them. You must follow all of the rules; you may not follow some and ignore others.

The case will be submitted to you in the form of a special verdict consisting of 2 questions, with subparts for each claim at issue. **[Read special verdict form.]** In answering the questions, you should consider only the evidence that has been received at this trial. Do not concern yourselves with whether your answers will be favorable to one side or another, or with what the final result of this lawsuit may be.

## **2. Burden of Proof**

When a party has the burden to prove any matter by a preponderance of the evidence, it means that you must be persuaded by the testimony and exhibits that the matter sought to be proved is more probably true than not true. When a party has the burden to prove any matter by clear and convincing evidence, it means that you must be persuaded by the testimony and exhibits that the matter sought to be proved is highly probable. On the liability questions in the special verdict, the burden of proof is on the party contending that the answer to a question should be “yes.” You should base your decision on all of the evidence, regardless of which party presented it.

## **3. Answers Not Based on Guesswork**

If, after you have discussed the testimony and all other evidence that bears upon a particular question, you find that the evidence is so uncertain or inadequate that you have to guess what the answer should be, then the party having the burden of proof as to that question has not met the required burden of proof. Your answers are not to be based on guesswork or speculation. They are to be based upon credible evidence from which you can find the existence of the facts that the party must prove in order to satisfy the burden of proof on the question under consideration.

## **4. Definitions**

At the beginning of the trial, I gave you some general information about patents and the patent system, as well as a brief overview of the patent laws relevant to this case.

I will now give you more detailed instructions about those aspects of patent law that specifically relate to this case.

**a. Person of Ordinary Skill**

Some issues in patent cases are determined by a reference to a “person of ordinary skill in the art or field of the invention.” In this case, the art or field of the invention is computer architecture, including microprocessor design.

It is up to you to decide the level of ordinary skill. In making this decision, you should consider all the evidence, including:

- the levels of education and experience of persons working in the field;
- the types of problems encountered in the field; and
- the sophistication of the technology in the field.

**b. The Patent Claims**

As the video described at the beginning of the trial, the claims of a patent are the numbered sentences at the end of the patent. The claims define the patent owner’s rights under the law. That is, the claims define what the patent owner may exclude others from doing during the term of the patent.

In patent law, the requirements of a claim are often referred to as “claim elements” or “claim limitations.” For example, a claim that covers the invention of a table may describe the tabletop, four legs and glue that holds the legs and the tabletop together. The tabletop, legs and glue are each a separate limitation or requirement of the claim.

The claims are the main focus when a patent’s validity is challenged. In this case, we are concerned with claims 1, 2, 3, 5, 6 and 9 of the ’752 patent. WARF contends

that Apple infringed these claims. Apple denies this and contends that these claims are invalid.

When a product or process is accused of infringing a patent, it is the *claims* of the patent that must be compared to the accused product or process to determine whether or not there is infringement. It is the claims of the patent that are infringed when patent infringement occurs. The claims are also the main focus when a patent's validity is challenged. For example, in deciding whether a patent is invalid because it is anticipated or obvious, you must compare the claims to the asserted prior art. In reaching your determinations with respect to infringement and invalidity, you must consider each claim of the patent separately.

Therefore, the first step in any patent case is to understand the meaning of the words used in the patent claims. It is my job as the judge to determine what the patent claims mean and to instruct you about that meaning. You must accept the meanings I give you and use them when you decide whether or not the asserted claims of the asserted patents are infringed, and whether or not the asserted claims of the asserted patents are invalid.

### c. Meaning of the Patent Claims

I have provided you with a copy of the '752 patent. I will now instruct you on the meaning of the following eight terms found in the claims:

- **“data consuming instruction”** (in claims 1, 2, 3, 5, 6 and 9) means “instruction that consumes data by obtaining data from memory, such as a LOAD instruction.”
- **“data producing instruction”** (in claims 1, 2, 3, 5, 6, and 9) means “instruction that produces data by providing data to memory, such as a STORE instruction.”

- **“data speculation circuit”** (in claims 1 and 9) means “a circuit that detects data dependence between load and store instructions and that detects mis-speculation by load instructions.”
- **“mis-speculation”** (in claims 1, 6 and 9) means “when a load instruction that is dependent for its data on a store instruction appearing earlier in the program order is in fact executed before the store instruction wrote its data to a memory address shared with the load instruction.”
- **“in fact executed”** (in claims 1 and 9) means “when a load instruction has actually accessed a memory address that has not yet been updated by a store instruction appearing earlier in the program order.”
- **“predictor”** (in claim 1) means “a circuit that receives a mis-speculation indication from the data speculation circuit to produce a prediction.”
- **“prediction”** (in claims 1, 2, 3, 5 and 9) means “a variable that indicates the likelihood that the data speculative execution of a load instruction will result in a mis-speculation, where a ‘prediction’ must be capable of receiving ongoing updates.”
- **“prediction table” and “synchronization table”** (in claim 5) can be located in the same structure, including in a single table, and can share data and circuitry.

The asserted claims of the ’752 patent all use or incorporate the term “comprising.” When a patent claim uses the term “comprising,” it means that the invention includes the listed requirements, but is not limited to those requirements. All other claim terms should be given their plain and ordinary meaning as viewed from the perspective of a person of ordinary skill in the art or field of the invention.

#### **d. Independent and Dependent Claims**

Patent claims may exist in two forms, called independent claims and dependent claims. An independent claim stands on its own and does not refer to any other claim of the patent. A dependent claim refers to at least one other claim in the patent. A

dependent claim includes each of the requirements of the other claim or claims to which it refers, as well as the requirements in the dependent claim itself.

For example, a hypothetical patent claim for a table may describe the tabletop, four legs, and glue to hold the legs and tabletop together. That is an example of an independent claim. In that same hypothetical patent, a dependent claim might be one that stated, “the same table in the initial claim, where the tabletop is square.”

In this case, claims 1 and 9 are independent claims. Claims 2, 3, 5 and 6 are dependent claims.

#### **e. Representative Accused Products**

The accused products in this case include Apple’s A7, A8 and A8X processors and all iPhone and iPad products that contain those processors. The parties have agreed that Apple’s A7, A8 and A8X processors all operate in an identical manner for the purposes of analyzing infringement. Accordingly, you may consider evidence regarding any of the A7, A8 and A8X processors as representative of all three processor models when making your determination regarding infringement.

### **5. Infringement**

Infringement occurs if each requirement of a claim is found in an accused product. As I have explained, WARF contends that Apple has infringed claims 1, 2, 3, 5, 6 and 9 of the ’752 patent. To determine whether Apple infringed WARF’s patent, you must compare Apple’s accused products against each one of these claims.

You must compare the accused products with each and every one of the requirements of a claim to determine whether all of the requirements of that claim are met. You may not compare the accused products with any example described in the specification of the '752 patent. For determining infringement, the only correct comparison is between the accused products and the language of the asserted claims as I have explained that language's meaning to you. Therefore, you must reach your decision as to infringement based on the legal requirements for infringement, my instructions about the meaning of the claim language, and the evidence presented to you by the parties.

To determine whether a dependent claim has been infringed, you must compare Apple's accused products to both the dependent claim and the claims it refers to. For example, if claim 2 is dependent from claim 1, it may say, "2. The product according to claim 1, wherein . . . ." In this situation, dependent claim 2 cannot be infringed unless claim 1 is also infringed. For this reason, in the example you would have to compare Apple's accused products to all the requirements of both claims 1 and 2.

Someone can directly infringe a patent without knowing of the patent or without knowing that what they were doing is an infringement of the patent. They also may infringe a patent even though they believe in good faith that what they are doing does not infringe a patent or if they believe in good faith that the patent is invalid.

An accused device may be found to infringe if it is reasonably capable of satisfying the claim limitations of the asserted patent, even though it may also be capable of non-infringing modes of operation. For example, if a defendant's product is found to

be non-infringing under a particular set of circumstances, the defendant would still be liable if the device is found to infringe under other foreseeable operating conditions. An accused product that sometimes, but not always, embodies a claimed invention nonetheless infringes.

In this case, the parties dispute whether the following elements of the asserted claims of the '752 patent are present in the accused products:

**Claims 1, 2, 3, 5, 6 and 9**

- “a data speculation circuit for detecting data dependence between instructions and detecting a mis-speculation”
- “a predictor receiving a mis-speculation indication from the data speculation circuit to produce a prediction . . . based on a mis-speculation indication”
- “a prediction associated with the particular data consuming instruction”

**Claims 3 and 9 only**

- “a prediction table listing certain data consuming instructions and certain data producing instructions each associated with a prediction”

**Claims 5 and 6 only**

- “a flag value indicating whether the respective certain data producing instruction has been executed”

WARF contends that Apple infringed claims 1, 2, 3, 5, 6 and 9 of the '752 patent.

To succeed on this contention, WARF must prove the following by a preponderance of the evidence:

- 1) *Every* element in the particular claim of the '752 patent that you are considering is found in Apple's accused products exactly as it is in the claim; and
- 2) Apple made, used, sold, or offered to sell the accused products in the United States, or imported the accused products into the United States.



## **6. Invalidity**

### **a. Overview**

Defendant Apple has challenged the validity of all of the asserted claims of the '752 patent. Each of the claims is presumed to be valid. For that reason, Apple has the burden of proving invalidity by clear and convincing evidence. As described above, "clear and convincing" evidence convinces you that it is highly probable that the particular proposition is true. You must evaluate and determine separately the validity of each asserted claim of the '752 patent.

### **b. Prior Art**

Prior art may include items that were publicly known, including publications or patents that disclose the claimed invention or elements of the claimed invention. To be prior art, the item or reference must have been made, known, used, published, or patented either before the invention was made or more than one year before the effective filing date of the patent application. However, prior art does not include a publication that describes the inventor's own work and was published less than one year before the date of invention.

In determining invalidity, you may need to consider what is disclosed in the "prior art." The prior patent or publication need not use the identical words as those recited in the asserted claims. The parties agree that the following references are prior art to the '752 patent, although plaintiff denies any of these references invalidate the patent:

- U.S. Patent No. 5,615,350 ("Hesson '350")
- U.S. Patent No. 5,666,506 ("Hesson '506")

- U.S. Patent No. 5,619,662 (“Steely”)
- W. Chen, R. Bringmann, S. Mahlke, S. Anik, T. Kiyohara, N. Warter, D. Lavery, W.-M. Hwu, R. Hank and J. Gyllenhaal., *Using Profile Information to Assist Advanced Compiler Optimization and Scheduling*, Proceedings of Languages and Compilers for Parallel Computing, pp. 31-48, 1993 (“Chen”)
- William Y. Chen, Scott A. Mahlke, Nancy J. Warter, Sadun Anik, and Wen-Mei W. Hwu, *Profile-Assisted Instruction Scheduling*, International Journal for Parallel Programming, vol. 22, no. 2, pp. 151-181 (April 1994) (“Chen IJPP”)
- William Yu-Wei Chen, Jr., *Data Preload for Superscalar and VLIW Processors*, Ph.D. Thesis, University of Illinois at Urbana-Champaign, Department of Electrical Engineering, August 1993 (“Chen Thesis”)
- David M. Gallagher, William Y. Chen, Scott A. Mahlke, John C. Gyllenhaal and Wen-mei W. Hwu, *Dynamic Memory Disambiguation Using the Memory Conflict Buffer*, Proceedings of the 6th Symposium on Architectural Support for Programming Languages and Operating Systems, pp. 183-193, 1994 (“Gallagher”)

The parties disagree regarding whether other references constitute prior art. Before you may consider any disputed reference as prior art, Apple must prove by clear and convincing evidence that the reference was any one of the following:

- Known or used by someone else in the United States before the date of invention, unless the knowledge or use was private or secret. An invention is known when the information about it was reasonably accessible to the public on that date.
- In public use or on sale in the United States more than one year before the patent application was filed. An invention is “in public use” if it is used publicly by the inventor or by a person who is not under any limitation, restriction, or obligation of secrecy to the inventor. An item is “on sale” if it was the subject of a commercial offer for sale in the United States, and if, at that time, there was reason to believe that the item would work for its intended purpose. A single offer to sell, primarily for profit rather than for experimental purposes, is sufficient, even if no actual sale was made.
- Already patented or described in a publication before the date of the invention or more than one year before the patent application was filed. To qualify as a “publication,” the reference must be disseminated or reasonably accessible to persons interested in the field of the invention. The prior patent or

publication need not use the identical words as those recited in the asserted claims.

- Described in a published patent application filed in the United States before the date of invention. An invention was patented by another if the other patent describes and enables the same invention claimed to a person having ordinary skill in the technology.
- Invented first by someone else in the United States, if that other person had not abandoned the invention or kept it secret. If one person conceived of the claimed invention first, but reduced to practice second, that person is the first inventor only if that person (a) began to reduce the claimed invention to practice before the other party conceived of it, and (b) continued to work diligently to reduce it to practice until the invention is actually reduced to practice. An invention is “conceived” when the inventor has formed the idea of how to make and use every aspect of the claimed invention. An invention is “actually reduced to practice” when it is made and shown that it will work for its intended purpose.

The term “date of invention” means the date the ’752 patent application was filed, December 26, 1996, unless WARF proves by a preponderance of the evidence that the invention was conceived and actually reduced to practice at an earlier date.

### **c. Anticipation**

A person cannot obtain a patent if someone else already has made an identical invention. Simply put, the invention must be new. An invention that is not new or novel is said to be “anticipated by the prior art.” An invention that is “anticipated” is not entitled to patent protection. To prove anticipation, Apple must prove by clear and convincing evidence that the claimed invention is not new. Anticipation is determined on a claim-by-claim basis.

Apple contends that claims 1, 2, 3 and 9 of the ’752 patent are anticipated. To anticipate a claim, each and every element in the claim must be present in a *single* item of

prior art arranged or combined in the same way as recited in the claim and that a person with an ordinary level of skill in the field of the invention who looked at the prior art would have been able to make and use the invention disclosed in the claim. You may not combine two or more items of prior art to prove anticipation. The disclosure in the prior art does not have to be in the same words as the claim, but all of the requirements of the claim must be there, either stated or necessarily implied, so that someone of ordinary skill in the art looking at that one prior art reference would be able to make and use at least one embodiment of the claimed invention without undue experimentation.

**d. Obviousness**

Apple also contends that all of the asserted claims are invalid because they are obvious. A claimed invention is invalid as “obvious” if it would have been obvious to a person of ordinary skill in the art of the claimed invention at the time the invention was made. Unlike anticipation, which allows consideration of only *one* item of prior art, obviousness may be shown by considering more than one item of prior art. Like anticipation, the party seeking to invalidate a claim on grounds of obviousness must prove it so by clear and convincing evidence.

The following factors must be evaluated to determine whether Apple has established that plaintiff’s claimed invention is obvious:

- 1) the scope and content of the prior art;
- 2) the difference or differences, if any, between each claim of the asserted patent and the prior art;
- 3) the level of ordinary skill in the art at the time the invention of the asserted patent was made; and

- 4) additional considerations, if any, that indicate that the invention was obvious or not obvious.

Each of these factors must be evaluated, although they may be analyzed in any order, and you must perform a separate analysis for each of the claims.

Keep in mind that the existence of each and every element of the claimed invention in the prior art does not necessarily prove obviousness. Most, if not all, inventions rely on building blocks of prior art. In considering whether a claimed invention is obvious, you may (but are not required to) find obviousness if you find that at the time of the claimed invention there was a reason that would have prompted a person having ordinary skill in the art to combine the known elements in the way the claimed invention does and that a person having ordinary skill would have had a reasonable expectation of success in doing so. In reaching this finding, you should take into account factors such as:

- whether the change was merely the predictable result of using prior art elements according to their known functions;
- whether the prior art teaches away from combining elements in the claimed invention;
- whether the claimed invention would have been obvious to try, meaning that the claimed innovation was one of a relatively small number of possible approaches to the problem with a reasonable expectation of success by those skilled in the art;
- whether the change resulted more from design incentives or other market forces;
- whether the claimed invention provides an obvious solution to a known problem in the relevant field;
- whether a person of ordinary skill in the art could implement a predictable variation, and would see the benefit of doing so;

- whether there is some teaching or suggestion in the prior art to make the modification or combination of elements claimed in the patent; and
- whether the alleged innovation applies a known technique that had been used to improve a similar device or method in a similar way.

However, you must be careful *not* to determine obviousness using the benefit of hindsight. Many true inventions might seem obvious after the fact. You should put yourself in the position of a person of ordinary skill in the art at the time the claimed invention was made and you should not consider what is known today or what is learned from the teaching of the patent.

Finally, you should also consider any of the following factors that, if present, may indicate the invention was *not* obvious:

- whether the claimed invention was commercially successful as a result of the merits of the claimed invention (rather than the result of design needs or market-pressure advertising or similar activities);
- whether the claimed invention satisfies a long felt need for the solution provided by the claimed invention;
- whether others had tried and failed to make the invention;
- independent invention of the claimed invention by others before or at about the same time as the named inventor thought of it;
- whether others copied the invention;
- whether there were changes or related technologies or market needs contemporaneous with the invention;
- whether the invention achieved unexpected results;
- whether others in the field praised the invention;
- whether persons having ordinary skill in the art of the invention expressed surprise or disbelief regarding the invention;

- whether others sought or obtained rights to the patent from the patent holder; and
- whether the inventor proceeded contrary to accepted wisdom in the field.

At times you saw exhibits or heard testimony concerning comments or statements about Dr. Sohi and Dr. Moshovos or their work. This evidence is only to be considered by you to show what others said about the work of Dr. Sohi and Dr. Moshovos. The statements are not admitted as proof of the *truth* of the statements, but rather as to as evidence of how their work was received by others skilled in the art. Similar hearsay statements were occasionally admitted by the court for reasons other than the truth of the matter asserted. In these limited instances, you may consider them in your determination of a speaker's or listener's state of mind, knowledge, motive or similar matters, but *not* for the truth of the factual assertion in the statement itself.